REMARKS

Reconsideration of this application, as amended, is respectfully requested.

ALLOWABLE SUBJECT MATTER

The Examiner's indication of the allowability of the subject matter of claims 6-11 is respectfully acknowledged.

These claims, however, have not been rewritten in independent form at this time since, as set forth in detail hereinbelow, it is respectfully submitted that their parent claim 1, as amended, now also recites allowable subject matter.

THE CLAIMS

Claim 1 has been amended to incorporate the subject matter of claim 17.

In addition, claims 1, 2, 4, 6-11, 13, 15, 16, 19 and 20 have been amended to make some minor grammatical improvements and to correct some minor antecedent basis problems so as to put them in better form for issuance in a U.S. patent.

No new matter has been added, and it is respectfully requested that the amendments to claims 1, 2, 4, 6-11, 13, 15, 16, 19 and 20 be approved and entered.

THE PRIOR ART REJECTION

Claims 1 and 3 were rejected under 35 USC 103 as being anticipated by JP 55-80388 ("Yano et al"); claims 2, 4, 5, 12, 13 and 16-20 were rejected under 35 USC 103 as being obvious in view of the combination of Yano et al with the Admitted Prior Art in the present specification; and claims 14 and 15 were rejected under 35 USC 103 as being obvious in view of the combination of Yano et al and USP 5,920,079 ("Shimizu et al"). These rejections, however, are respectfully traversed with respect to the claims as amended hereinabove.

As recognized by the Examiner, Yano et al discloses an n-type cladding layer formed from InGaAsP and a p-type cladding layer formed from InP, which are arranged to hold an active layer therebetween, and which are provided over a semiconductor substrate formed from InP.

However, according to Yano et al, a loss layer is also provided between the cladding layer and the semiconductor substrate. And according to Yano et al the width of the current injecting region is set to be slightly broader than the width of the light emitting region, so as to stabilize the transverse mode.

In addition, it is respectfully submitted that Yano et al does not disclose any reason for forming the n-type cladding layer from InGaAsP, and does not disclose any composition or

thickness of the n-InGaAsP cladding layer or any result from providing an n-InGaAsP cladding layer.

Therefore, it is respectfully submitted that Yano et al does not disclose, teach or suggest an appropriate composition or thickness for an n-type cladding layer formed from InGaAsP to reduce optical loss by intervalence band light absorption generated in the p-type cladding layer, in the manner of the claimed present invention.

According to the present invention as recited in amended independent claim 1, the n-type cladding layer is formed from InGaAsP, and the an active layer a width of not less than 3.5 μm, which is wider than the maximum active layer width effective for reducing a lateral high-order mode according to conventional semiconductor lasers using a normal InP clad (that is, 3.3 μm).

Reference Fig. A shows a relationship between (numeric simulation of) a bandgap wavelength of an n-side cladding layer formed from InGaAsP and a maximum width of an active layer for reducing a later high-order mode (a cut-off width). If the bandgap wavelength is 0.95 μm, the cut-off width will be about 4.5 μm, and if the bandgap wavelength is 0.97 μm, the cut-off width increases to about 10 μm.

In view of the foregoing, it is respectfully submitted that the present invention as recited in amended independent claim 1, as well as claims 2, 4-16, 19 and 20 depending therefrom, clearly

patentably distinguishes over Yano et al, taken singly or in combination with the admitted prior art and Shimizu et al, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

/Douglas Holtz/

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Reference Figure A